

Awareness of School Teachers about Diabetes Mellitus

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ABSTRACT

Background: Diabetes mellitus was defined by World health Organization as a metabolic disorder which characterized by chronic hyperglycemia. It is a disease with several etiologies. It is one of common diseases in children. School children with diabetes need special care while they are in school as they may experience problems in glucose levels or other problems. Teachers are persons responsible for children in school, so they should have adequate information and good level of awareness about diabetes to deal with diabetic children especially in emergency case.

Aim: To assess the awareness of school teachers about diabetes.

Methods: This cross-sectional study was performed in the period between October 2017 and November 2017 on school teachers in Makah region using a questionnaire. Data were analyzed by SPSS program.

Results: There were 58.4% males and 41.6% females in this study, the correlations between level of knowledge and different variables were as follow; the age of teachers significantly ($P\text{-value}=0.009$) affected the level of awareness, where teachers with older age (≥ 50 years) had the highest awareness among other participants, while those with age 40-49 years were the dominant group to have both moderate 30 (58.8%) and low awareness 20 (39.2%). Gender also was a significant factor that affected the level of awareness ($P\text{-value}=0.004$), where males 23 (33.8) had high level of awareness than females 3 (12.6%).

Conclusion: There was moderate level of knowledge about diabetes among school teachers. Age, gender, level of education and monthly income affected the level of knowledge.

Keywords: DM awareness, School Teachers, Saudi Arabia.

INTRODUCTION

Diabetes mellitus is a metabolic disorder in which there is a defect in the function of B-cell that located in the pancreas, this in turn results in insulin deflection, so the level of glucose increases [1]. The highest prevalence rates of diabetes are concentrated in North Africa and Middle East [2]. Diabetes is a challenging problem that Saudi Arabia faces [3], and there is a rising in diabetes prevalence in Saudi Arabia [4]. it was reported that diabetes mellitus reached to 3.4??? cases in Saudi Arabia in 2015 as reported by international diabetes federation [5]. There are several risk factors for diabetes development including; obesity, eating behavior, physical activity [6] and socioeconomic factors [7]. In school age children, diabetes is one of the most common disorders among them [8]. It was stated that type I diabetes affected 440,000 children in 2006 whose age was under 14 years old [8]. Diabetes can result in critical complications such as problems with eyes, bones and joints, teeth and gums, blood vessels, kidneys, nerves, skin and feet [9]. Complications of diabetes can be delayed or prevented by good management and control [9]. Knowledge is a factor that derives individuals for certain behavior. Gap in health knowledge can cause health problems [8]. School students with diabetes need knowledgeable personnel to help them in controlling and managing their diabetes while they are in school and practice their daily activities [10], as they need special health care [11].

Diabetes has psychological and physical effect on the affected children [11]. Teachers are the main care-giver for school children [12] and they are the first line for their protection [11]. They should deal very carefully with emergencies of children [13]. It was demonstrated that there was a role for teachers in assisting the diabetic school children in their special needs [14, 15]. It was reported that there was inadequate understanding of diabetes among the majority of school personnel [16, 17]. Other studies [12, 18] reported that teachers had poor level of knowledge about diabetes and its management and there was a fundamental lack of understanding of child health issues. Also, it was reported that 25% of teachers had insufficient understanding of diabetes and low knowledge about the recognition and treatment of emergency problems in diabetics [19]. So the aim of this study was to assess the awareness of teachers about diabetes in Makah region.

MATERIALS AND METHODS

Study design and subjects

The present study is a cross sectional study which was conducted on teachers in Makah, Saudi Arabia in the period from October 2017 to November 2017. The study based on a survey consisted of 32 questions, this survey was distributed between participants. The survey included two parts, the first one to investigate demographics of teachers and the second part to investigate awareness of participants.

The study was done after approval of ethical board of King Abdulaziz university.

Statistical analysis

SPSS 16.0 software package was used to analyse data. Qualitative data were presented as frequencies and percent.

A probability value of less than or equal 0.05 was considered statistically significant.

RESULTS

The present study included 116 teachers of different school levels in Makah. There were 68(58.4%) males and 48 (41.6%) females, most of participants 51 (44.2%) were in the age range 40 - <50 years, 12 (10.6%) were in the age of ≥50 and 10 (8.2%) were between 30- <40 years old and 43 (37%) were less than 30 years old (figure 1). The large majority were married 102 (87.7%), whereas 10 (9.2%), 3(2.4%) and 1(0.7%) were single, widow and divorced respectively.

There were 90 (77.6%) of teachers had university education, 9 (7.7%) had diploma, 1 (0.7%) had master degree and 16 (14%) had doctorate degree. The large majority were secondary school teachers 61 (52.9%), followed by teachers from intermediate school 29 (24.7%) and 26(22.4%) were primary school teachers. The teachers were from different area in Makah, 21(18.2%) were from south Makah, 45 (38.7%) were from east, 26 (22.4%) and 24 (20.7%) were from north and west Makah respectively.

4 (3.9%) of teachers had monthly income of <5000 SR, 19 (15.8%) had 5000 to <10000 SR, 35 (30.3%) had 10000 to <15000 SR and 58 (50%) had more than 15000 SR income per month. There were 35 (30%) teachers had 20 years and more years of experience, 19 (16.6%) had 15- <20 years, 27 (23.1%) were working for 10- <15 years, 17 (14.7%) had 5- <10 years of experience, while 18 (15.6%) had less than 5 years of work as shown in table (1) which summarizes the demographics of participants.

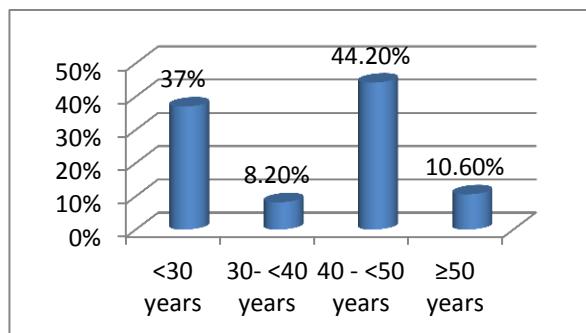


Fig (1): Age groups of teachers

Table (1): Characteristics of participants

Characteristics	N (%)
Gender	
Male	68(58.4%)
Female	48(41.6%)
Marital status	
Single	10(9.2%)
Married	102(87.7%)
Divorced	1(0.7%)
Widow	3(2.4%)
Level of education	
University	90(77.6%)
Diploma	9(7.7%)
Master degree	1(0.7%)
Doctorate degree	16(14%)
Level of school	
Primary	26(22.4%)
Intermediate	29(24.7%)
Secondary	61(52.9%)
Area of Mecca	
South	21(18.2%)
East	45(38.7%)
North	26(22.4%)
West	24(20.7%)
Monthly income	
<5000 SR	4(3.9%)
5000- <10000 SR	19(15.8%)
10000- <15000 SR	35(30.3%)
≥15000 SR	58(50%)
Years of work	
<5 years	18(15.6%)
5- <10 years	17(14.7%)
10- <15	27(23.1%)
15- <20	19(16.6%)
≥20 years	35(30%)

The level of awareness was classified into low, moderate and high, the correlation between level of awareness and demographics is shown in table (2). The age of teachers significantly (*P*-value = 0.009) affected the level of awareness, where teachers with older age (≥ 50 years) had the highest awareness among other participants, while those with age 40-49 years were the dominant group to have both moderate 30 (58.8%) and low awareness 20 (39.2%). Gender also was a significant factor that affected the level of awareness (*P*-value=0.004), where males 23 (33.8) had high level of awareness than females 3 (12.6%). Marital status, level of school and years of work didn't significantly affect the level of awareness (*P*-value = 0.5, 0.5, 0.1 respectively). The level of awareness significantly affected by level of teachers's education (*P*-value = 0.003), those with university education were dominant to have moderate 65 (72%) and high 6 (6.84%) awareness. Teachers with salary of 10000-<15000 SR, 15 (43%) had higher awareness than others, while 35 (60%) of those with salary ≥ 15000 SR had moderate awareness.

Table (2): Correlations between different levels of awareness and demographics

Characteristics	Awareness			P-value
	Low N (%)	Moderate N (%)	High N (%)	
Age				
<30 years	14(33.9%)	27(62.3%)	2(4.84%)	
30- <40 years	2(20%)	7(70%)	1(10%)	0.009*
40 - <50 years	20(39.2%)	30(58.8%)	1(2%)	
≥50 years	4(33.3%)	4(33.3%)	4(33.3%)	
Gender				
Male	20(29.5%)	25(36.7%)	23(33.8%)	0.004*
Female	10(20.8%)	32(66.6%)	3(12.6%)	
Marital status				
Single	4(40%)	3(30%)	3(30%)	0.5
Married	51(19.7%)	30(73.4%)	21(6.84%)	
Others	4(100%)	0	0	
Level of education				
University	19(21.2%)	65(72%)	6(6.84%)	
Diploma	3(33.3%)	3(33.3%)	3(33.3%)	0.003*
Master &Doctorate	10(59%)	4(23.5%)	3(17.5%)	
Level of school				
Primary	5(20.1%)	19(74.4%)	2(5.5%)	
Intermediate	7(23.7%)	20(69.5%)	2(6.87%)	0.5
Secondary	11(18.8%)	44(72.2%)	6(9%)	
Monthly income				
<5000 SR	1(25%)	2(50%)	1(25%)	
5000- <10000 SR	10(52.1%)	5(26.3%)	4(21.6%)	0.008*
10000- <15000 SR	10(28.5%)	10(28.5%)	15(43%)	
≥15000 SR	10(17.2%)	35(60%)	13(22.8%)	
Years of work				
<5 years	6(33.3%)	6(33.3%)	6(33.3%)	0.12
5- <10 years	10(58.8%)	4(23.5%)	3(17.7%)	
10- <15	9(33.3%)	10(37%)	8(29.7%)	
15- <20	8(42.1%)	6(31.5%)	5(26.4%)	
≥20 years	25(71.4%)	5(14.3%)	5(14.3%)	

*P-value; Significant

DISCUSSION

This is the first study to assess the knowledge of school teachers about diabetes in Makah. In the present study, the male teachers were more dominant (58.4%) than female teachers (41.6%) and the large majority of participants were in the age range of 40-≤50 years old representing 44.2% of all participants. The highest percent of teachers had university education (77.6%), while the least percent (0.7%) had master degree. Participants with years of experience ≥20 years represented 30%, while those with less than 5 years experience represented 15.6%. In a Jordanian study [19] there was dominancy in male and young age participants. A study from Turkey showed that 50% of participant teachers were males and most of them were married and had bachelor degree [20]. A study from Ghana [21] showed more prevalence of males

and married teachers and those with age of 30-39 years old and 1-5 years of experience. Most of our participants showed a moderate level of knowledge. In Bahraini study, it was reported an average knowledge of teachers [11] similar results were reported by other studies [12, 19, 22, 23]. In a study from Turkey about knowledge and attitude of teachers toward DM complications, it was found that the teachers had adequate knowledge of DM complications [20]. Regarding age of teachers, the present study showed that age significantly affected the level of knowledge of teachers (P-value = 0.009), high knowledge was more common in older teacher than younger ones. In the present study, we found that the level of knowledge was significantly associated with gender (P-value = 0.004), where males tended to have higher level of knowledge than females. This was in agreement with a previous

study in Jordan, where it was reported that gender of counselors had a significant effect on the level of knowledge [9]. In a previous Bahraini study, it was found that female teachers were more knowledgeable about DM [11] which was in contrast to our findings. The current study, revealed that marital status, level of school where teachers work and years of work didn't affect the level of knowledge. In contrast to our results, one study [11] reported that level of school where teachers work and marital status influenced the level of knowledge and the primary school teachers were more knowledgeable than the others and married individuals were more aware than the single ones. Level of education of teachers was significantly associated with the level of knowledge (P-value = 0.003) and those with university education had higher level of knowledge than other teachers with other educational degrees. Monthly income of our teachers was significantly related to the level of knowledge (P-value = 0.008), the higher the income the higher knowledge level. There were few studies conducted on the present subject and they were of different design, so we couldn't compare more findings of our study as there were no similar studies. This subject should get more attention to avoid complication of diabetes in children as they spend more of their times in the school.

CONCLUSION

This study revealed that teachers' knowledge about diabetes was associated with several factors including older age, male gender, university education of teachers and higher monthly income. There is a need for establishing programs to educate teachers about the diabetes and its control as well as their roles in controlling diabetic children in schools. This was the first study performed in Makah about the knowledge of teachers about diabetes, however it included small size of subjects, so further studies are much recommended.

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